

SNYLF CONSERVATION MEASURES FROM PROGRAMMATIC CONSULTATION (USDI, 2014a)

The following applicable programmatic conservation measures for the Sierra Nevada yellow legged from from the biological opinion (USDI, 2014a) must be followed with the implementation of the Gibsonville Project:

Programmatic Conservation Measures

The following conservation measures are intended to avoid, and minimize, the effects of projects in the nine Forest programs on the Sierra Nevada yellow-legged frog, the Northern Distinct Population Segment of the mountain yellow-legged frog, and Yosemite toad,. These measures are the appropriate S&Gs and BMPs from the individual Forest Land and Resource Management as amended by the 2004 Sierra Nevada Forest Plan Amendment (USFS 2004), and Region 5 Hydrologic Best Management Practices. These S&Gs and BMPs are treated as minimums.

The following conservation measures are alphabetized as they are in the biological opinion (USDA, 2014b).

1. General Measures: The following S&Gs and BMPs establish general guidelines that will be implemented for all nine Forest Service programs. Site-specific implementation measures that comport with these guidelines will be described for individual projects as they are proposed:
 - a. Not applicable
 - b. Within critical aquatic refuges, occupied habitats, or areas proposed as Critical Habitat, mitigation measures to avoid impacts to the 3 listed amphibians will be implemented for ground disturbing equipment to reduce the risk of killing individuals and adversely affecting their habitat (per S&G 109). The measures may include avoiding the activity all together.
 - c. Low ground pressure equipment, helicopters, over the snow logging, or other non-ground disturbing actions will be implemented when needed to achieve Riparian Conservation Objectives in the written opinion of the Forest Biologist in order to minimize impacts to riparian conservation areas when operating off of existing roads. The measures include minimizing construction of skid trails or roads for access into riparian conservation areas for fuel treatments, salvage harvest, or hazard tree removal (per S&G 113).
 - d. Prescribed fire treatments will be designed to minimize disturbance to ground cover and riparian vegetation in riparian conservation areas (per S&G 111). Further, no prescribed fires will be lit within riparian vegetation (per S&G 109).
 - e. The use of low velocity water pumps and screening devices for pumps (per S&G 110) will be utilized during drafting for project treatments to preventing mortality of eggs, tadpoles, juveniles, and adult frogs.
 - f. Not applicable

- g. Not applicable
- h. If management activities are proposed in a CAR or RCA, site-specific mitigation measures will be designed to (1) minimize risk of sediment entry into aquatic systems and (2) minimize impacts to habitat for aquatic- and riparian-dependent species (per S&G 92).
- i. Mechanical ground-disturbing activities may occur within RCAs and CARs when the activity is consistent with riparian conservation objectives (per S&G 113). Potential adverse effects will be minimized by a requirement to utilize low ground pressure equipment, helicopters, over snow logging or other non-ground disturbing methodologies when operating off of existing roads. BMPs will be applied, and construction of new skid roads or trails into these areas minimized.
- j. When a project results in riparian vegetation being outside the range of natural variability to an extent that the three listed amphibians and/or their habitats may be negatively affected, design criteria will be incorporated to mitigate effects or restore to riparian vegetation to the natural range of variability during project implementation (per S&G 105).
- k. Not applicable
- l. In CARS or RCAs, proposed management activities will increase or decrease frequency and distribution of coarse woody debris so that they more closely match levels within the range of natural variability in order to sustain stream channel physical complexity and stability (per S&G 108).
- m. Not applicable.
- n. Management activities will not adversely affect water temperatures required for local species, including the three amphibian species (per S&G 96).

Program Specific Conservation Measures

- 1. The following S&Gs and BMPs will be specifically implemented for the **Timber Harvest, Vegetation Management, Fuels Management, and Watershed Restoration** Programs. These conservation measures will be included as part of the individual projects that can be appended to this programmatic biological opinion.
 - a. Protection needs will be established with appropriate restrictions and mapped prior to commencement of operations (per BMP 1.4). This includes wetlands, meadows, lakes, springs, streamcourse protection zone widths, etc.
 - b. A limited operating period may be established to ensure that negative impacts to resources may be avoided; contract provisions can also be used to close down operations during adverse operating conditions (per BMP 1.5)
 - c. Not applicable

- e. Water quality and hydrologic considerations as evaluated by a trained earth or water scientist will be incorporated into the timber sale planning process (per BMP 1.1).
- f. Fire and fuels management activities in the form of preventative, corrective and administrative measures include the use of prescribed fire or mechanical methods to achieve resource objectives to reduce flooding and erosion perturbations. This may be achieved by managing the frequency, intensity and extent of wildfire (per BMP 6.1). Where operations disturb the soil, a vegetative ground cover will be established to prevent erosion and sedimentation (per BMP 1.15).
- g. Harvested or managed areas will be revegetated within five years to contain the minimum number, size and species composition specified in regional silvicultural guides for each forest type. This protects water quality by helping to stabilize soils, increasing ground cover and providing improved infiltration (per BMP 1.23).
- h. Soil erosion will be minimized to protect water quality via the stabilizing influence of vegetation foliage and root networks. Surface-disturbed areas will be revegetated with grass or browse species between previously planted trees as needed for control of overland runoff and to meet wildlife needs (per BMP 5.4).
- i. Forests will maintain desirable stream channel characteristics and watershed conditions to ensure favorable conditions of water quality and quantity and maintain habitat for three listed amphibians. In designing harvest units, size and distribution of natural structures, such as snag and down logs, will be considered to prevent erosion and sedimentation (per BMP 1.2).
- j. High-erosion hazard areas will be identified pre-project to adjust treatment measures and prevent downstream water-quality degradation (per BMP 1.3).
- k. Unstable lands will be protected by providing special treatment of these areas to avoid triggering mass slope failure with resultant erosion and sedimentation (per BMP 1.6).
- l. Tractor logging will be avoided where the predicted, post-logging erosion hazard cannot be reduced to either "low" or "moderate." The careful control of skidding patterns will serve to avoid onsite and downstream channel instability, build-up of destructive runoff flows, and erosion in sensitive watershed areas such as meadows and Streamside Management Zones (per BMP 1.9; per BMP 1.10).
- n. Locate new log landings or reuse old landings located in such a way as to avoid watershed impacts and associated water quality degradation. Landing locations will be selected that involve the least amount of excavation and the least erosion potential, and to the extent feasible are well outside of the Streamside Management Zone; near the ridges away from headwater swales in areas that will allow skidding without crossing channels; and avoid violating the Streamside Management Zone, or causing direct deposit of soil and debris to the stream. The Sale Administrator will work with the Forest Biologist and the IDT when considering landings that do not meet these criteria. Landings will be located where the least amount of skid roads will be required, and sidecast can be stabilized without entering

drainages or affecting other sensitive areas. Landings will be positioned such that the skid road approach will be as nearly level as possible to promote safety, and protect the soil from erosion. The number of skid trails entering a landing will be kept to a minimum (per BMP 1.12).

- o. The Forest Service will ensure that purchasers and their sub-contractors understand and adhere to water-quality BMP prescriptions formulated during the timber sale planning process to prevent and control erosion during timber sale operations. This will be accomplished by setting forth the purchaser's responsibilities in the timber sale contract, and holding the purchaser accountable for actions of their sub-contractor (per BMP 1.13).
- p. Appropriate erosion and sedimentation protection for disturbed areas will be provided by spreading slash, mulch, wood chips, or, by agreement, some other treatment, on portions of tractor roads, skid trails, landings, cable corridors or temporary road fills (per BMP 1.14).
- q. Erosion will be minimized by ensuring that constructed erosion-control structures are stabilized and working (per BMP 1.20)
- r. The Forest Service's formal acceptance of erosion control work by the sale purchaser will be required to ensure the adequacy of required erosion-control work on timber sales (per BMP 1.21).
- s. Water quality will be maintained or improved by protecting sensitive areas from degradation which likely would result from using mechanized equipment for slash disposal. Special slash treatment site preparation will be prescribed in sensitive areas (including areas with habitat for the three listed amphibians) to facilitate slash disposal without use of mechanized equipment (per BMP 1.22).
- t. Use of mechanized equipment will be prohibited from sensitive areas in meadows, wetlands, Streamside Management Zones, and landslide areas (per BMP 1.22, per BMP 1.8, and per BMP 1.1).
- u. For soil disturbing treatments other than timber harvest (cover by other BMPs), preventative measures will be implemented that decrease sediment production and stream turbidity resulting from management activities e.g., disking, seed drilling, windrowing, that mechanically treat slopes. Preventative measures that will limit surface-disturbance activities will be identified for each specific site based on the slope, infiltration rate, permeability, and water-holding capacity of the soil of the site. Examples of preventative measures include extra ground cover requirements and/or buffers of streams and/or riparian areas for mechanical treatment (per BMP 5.1).
- v. During project planning, slope limitation will be established for tractor use to reduce gully and sheet erosion and associated sediment production. This is a preventive measure to limit excessive surface disturbance and prevent surface water from concentrating. This measure facilitates making allowances for proper drainage of disturbed areas by limiting tractor operation to slopes where corrective measures such as water bars can be effectively installed (per BMP 5.2).

- w. Watersheds will be restored to repair degraded watershed conditions and improve water quality and soil stability. Watershed restoration is a corrective measure to improve ground cover density; improve infiltration; prevent excessive overland runoff and conserve the soil resource; stabilize stream banks and stream channels; improve soil productivity; reduce flood occurrence and flood damage; and improve overall watershed function (per BMP 7.1)
- x. The designations of SMZs will minimize the potential for adverse effects from adjacent management activities. Management activities within these zones are designed to improve riparian values and to protect the three listed amphibians. The SMZ will be a zone of total exclusion of activity, or a zone of closely managed activity that acts as an effective filter and absorptive zone for sediment; maintains shade; protects aquatic and terrestrial riparian habitats; protects channel and streambanks; and promotes floodplain stability (per BMP 1.8).
- y. Damage to the ground cover, soil, and the hydrologic function of meadows will be avoided to protect meadows. Unless otherwise agreed, trees felled into meadows will be removed by end-lining, with slash removed, and the resulting disturbance will be repaired where necessary to protect vegetative cover, soil, and water quality (per BMP 1.18).
- z. In order to protect streamcourses and aquatic areas where diversion of the stream has resulted from timber management, unobstructed passage of stormflows will be provided, sediment and other pollutants entering streamcourses controlled, and the natural course of any stream restored as soon as practicable (per BMP 1.19).
- aa. Tractor operations will be limited in wetlands and meadows. In order to limit turbidity and sediment production resulting from compaction, rutting, runoff concentration, and subsequent erosion use of mechanical equipment will be excluded in wetland and meadows except for the purpose of restoring wetland and meadow functions. Sediment and other pollutants will be controlled from entering streamcourses. The application of this BMP will be mandatory on all vegetation-manipulation projects as prescribed in the environmental documentation (per BMP 5.3). Specific protection measures will be established for each area that could incur adverse water-quality impacts (per BMP 1.18).
- bb. Water-quality will be protected during the implementation of prescribed fires. The prescription will include at the watershed- and subwatershed-scale, the optimum and maximum burn block size, aggregate burned area, acceptable disturbance for contiguous and aggregate length for the Riparian/Streamside Management Zones; and expected fire return intervals and maximum expected area covered by water-repellant soils. (per BMP 6.2)
- cc. Water quality will be protected from prescribed burning effects by maintaining soil productivity; minimizing erosion; and minimizing ash, sediment, nutrients, and debris from entering water bodies (per BMP 6.3). Some of the techniques that will be used to prevent water-quality degradation include constructing water bars in fire lines, reducing fuel loading in drainage channels; and maintaining the integrity of the Streamside Management Zone within the limits of the burn plan.
- dd. Where possible, any long- and short-term adverse impacts to water quality associated with the occupancy and modification of floodplains will be avoided. Factors that will be evaluated include, environmental quality, ecological effects, and individual safety and health

will be considered as well as flood frequencies, watershed conditions, climatic and environmental factors associated with past flood events, flood flow quantities and specific flood boundaries (per BMP 7.2).

- ee. Adverse water-quality impacts associated with destruction, disturbance, or modification of wetlands will be avoided (per BMP 7.3). Factors that will be evaluated include, but are not limited to, water supply, water quality, recharge areas, functioning of the wetland during flood and storm events, flora and fauna, habitat diversity and stability, and hydrologic function of riparian areas.
 - ff. A water quality monitoring plan will be part of an environmental document, a management plan, or a special use permit, or it will be developed in response to other needs to evaluate the implementation and effectiveness of a management prescription in protecting water quality (per BMP 7.6).
 - gg. Management by closure to seasonal, temporary, and permanent use will be used to exclude activities that could result in damages to either resources or improvements, including impaired water quality from roads and trails (per BMP 7.7). Closure to use will occur when the condition of the watershed must be protected to preclude adverse water-quality effects and adverse impacts to the three listed amphibians (per BMP 1.5; per BMP 2.9).
 - hh. For any new proposed action or activity that may affect water quality, the Forest Service will examine all past, present, and future activities in a sub-watershed that may have a cumulative effect to water quality and beneficial uses (uses specified in water quality standards for each water body or segment), including the three listed amphibians if present in the sub-watershed or downstream. This Cumulative Watershed Effects (CWE) analysis is guided by considerations such as: whether the proposed activity along with other activity in that sub watershed exceed thresholds and are the risks to water quality are too great; whether the action can be deferred to let the watershed recover before implementation; and whether the short-term risks are acceptable, with added mitigation, given the long-term benefits (e.g., mechanical treatment of fuels may cause some short-term risk to water quality which may be acceptable if the treatment can prevent the greater impacts of a future large, high severity wildfire). The CWE process greatly facilitates development of appropriate mitigation measures/design criteria to avoid adverse effects to the three listed amphibians (per BMP 7.8).
2. The following S&Gs and BMPs will be specifically implemented for the **Road and Trail Maintenance** Program. These conservation measures will be included as part of the individual projects that can be appended to this programmatic biological opinion.
- a. To protect hydrologic values and aquatic species water source development and utilization will follow specific criteria for the location of drafting sites, procedures for drafting operations, as well as approaches and drafting pads (per BMP 2.5).
 - b. The Forest Service will minimize water, aquatic, and riparian resource disturbances that may affect individuals of the three amphibian species and related sediment production when constructing, reconstructing, or maintaining temporary and permanent water crossings (BMP 2.8). Specifications for stream crossing areas and design, construction/reconstruction of

permanent and temporary crossings, as well as maintenance of these crossings included in 36 technical specifications listed in BMP 2.8 will be followed.

- c. Measures described in BMP 2.11 to prevent adverse effects from fuels, lubricants, cleaners, and other harmful materials that are discharged into nearby surface waters or infiltrate through soils to contaminate groundwater resources on skin-respiring amphibians resulting from equipment refueling and servicing will be implemented.
- d. To protect water quality during road maintenance and operations, 31 practices related to road inspection, maintenance planning, and operations will be implemented as appropriate based on local site conditions (per BMP 2.4).
- e. Erosion, sedimentation, and chemical pollution that may result from snow removal and storage activities will be prevented or reduced (per BMP 2.9).
- f. Road construction and reconstruction will be designed to minimize erosion and sediment delivery (per BMP 2.3).
- g. Roads placed in storage will be maintained so that drainage facilities and runoff patterns function properly, and damage to adjacent resources is prevented (per BMP 2.6).
- h. A project-specific erosion control plan will be developed to effectively limit and mitigate erosion and sedimentation from any ground-disturbing activities, through planning prior to commencement of project activity, and through project management and administration during project implementation (per BMP 2.13).